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**APPLICATION NUMBER: 60/531,321**

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**RELATED PCT APPLICATION NUMBER: *PCT/US04/43253***



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PROVISIONAL APPLICATION COVER SHEET

MAIL STOP  
PROVISIONAL PATENT APPLICATION  
P.O. BOX 1450  
ALEXANDRIA VA 22313-1450

Re: ADHERENT KNIFE SANITIZER, by MANSOUR SAMADPOUR

The named inventor, **MANSOUR SAMADPOUR** has authorized the filing of this **PROVISIONAL PATENT APPLICATION** under 35 U.S.C. 111(b) for: **ADHERENT KNIFE SANITIZER**.

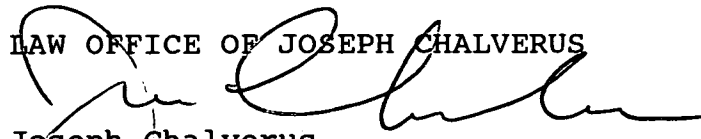
**MANSOUR SAMADPOUR** has an address of Molecular Epidemiology, Inc.  
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SEATTLE WA 98115 and is a citizen of THE UNITED STATES OF AMERICA

**MANSOUR SAMADPOUR** qualifies as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code

A written specification containing the description of the invention to enable any person skilled in the art to make and use the invention and setting forth the best mode for carrying out the invention in compliance with 35 U.S.C. 112 together with any drawings when necessary for the understanding of the invention are attached hereto.

A filing fee of \$ 160.00 is attached hereto.

LAW OFFICE OF JOSEPH CHALVERUS

  
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PAGES OF SPECIFICATION 2  
PAGES OF DRAWINGS 0

# **Provisional Patent Application Adherent Knife Sanitizer**

## **I. Background of Invention**

One of the major problems in the meat packing industry is the presence of microbial contaminants that jeopardize product safety. Based on various studies, microbiological loads on external surfaces of cattle are one of the primary sources of bacterial contamination of the meat products. Therefore, it is believed that lowering bacterial population densities on the surface of carcass offer decreased opportunities for transfer of bacterial contamination to downstream products.

Various precautions and treatments are applied in order to reduce presence of bacterial contaminants on the surface of the carcass however, none can insure complete decimation of the microorganisms.

Currently, in the practice of de-hiding or general cutting the carcass, the cutting blade is decontaminated by dipping into hot water ( $> 180^{\circ}\text{F}$ ). This decontamination method of cutting blade may not guarantee prevention of bacterial transport from the surface to the underlying tissue since the cutting blade loses its heat quickly when it touches the surface of the carcass. This drawback is especially noticeable when a deep incision is made in the carcass and cutting blade may come in contact with internal organs that harbor contaminants. Since the blade does not have any disinfectant, it may facilitate transfer of bacteria to other surfaces.

Furthermore, fecal contamination of hide surface is deemed to be a significant source of microbial pathogens that end up in the final products.

The aim of the proposed invention is to devise a viscous antimicrobial solution that can be used both to sanitize and to confer anti-microbial property to implements which are used in food processing. The solution can also be applied to contaminated surfaces such as hide, to cover, disinfect and seal the contaminants.

## **II. Summary of the Invention**

The proposed solution is an viscous disinfecting solution. All materials used in the solution are water soluble, food-grade, and at levels that considered to be safe. The viscosity of the solution is a contributing factor to its adherence and sealant properties, while factors such as low pH, high pH, and/or active disinfecting molecules, act as disinfectant.

Upon dipping a cutting blade into the solution, a layer of the solution covers the blade. When the cutting blade touches the surface of the carcass, some of the solution on the blade spread on the surface of the carcass on the immediate surrounding of the incision point. This action will decontaminate the surrounding of the incision point and prevents contaminants (if present) to be transferred to the underlying tissues. Prolonged adherence of the solution to the

cutting blade provides residual disinfecting properties than when the blade is dipped into hot water. This is especially important when a deep cut is made in the carcass or when the cutting blade contacts internal organs of the animal. In this case the protective layer on the cutting blade made by the solution prevents transfer of bacteria from the internal organs to other parts. The same solution when sprayed on the hide will form a protective layer on the surface of the hide which will eliminate the transfer of contaminants from hide to carcass, directly or indirectly. Additional uses of the solution in food industry include the use of the solution in sanitizing implements that are used to handle ready to eat products during last stages of processing, and its use anywhere else when residual anti-microbial property is desired. An example of the formulation of the product includes the use of lactic acid (as disinfectant), and pectin as a thickening agent. The solution can be pH adjusted 1.5-2, and applied hot or cold.